

Environmental Assessment Checklist

Project Name: Parrot Creek West Timber Sale
Proposed Implementation Date: June 2017
Proponent: Southern Land Office, Montana DNRC
County: Musselshell

Type and Purpose of Action

Description of Proposed Action:

The Southern Land Office of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the Parrot Creek West Timber Sale. The project is located approximately 6 miles southeast of Roundup, MT. (refer to Attachments vicinity map A-1 and project map A-2) and includes the following section:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools	T8N R26E Sec 36	590	301

Primary objectives of the project include:

- Generate revenue for the Common School Trust.
- Manage the forest to improve health, productivity and biodiversity.
- Reduce fuel loading and restore fire resiliency to treated stands.
- Improve long-term health and vigor of the forest and improve forage availability and range productivity.

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	Acres
Clearcut	
Seed Tree	
Shelterwood	
Selection	242
Commercial Thinning	6
Salvage	
Proposed Forest Improvement Treatment	# Acres
Pre-commercial Thinning	53
Meadow Restoration Clearing	
Total Treatment Acres	301
Proposed Road Activities	# Miles
New permanent road construction	0
New temporary road construction	0.25
Road maintenance	1.8

Action	Quantity
Road reconstruction	3.0
Road abandoned	
Road reclaimed	

Duration of Activities:	5
Implementation Period:	July 2017 – July 2022

The lands involved in this proposed project are held in trust by the State of Montana. (Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11). The Board of Land Commissioners and the DNRC are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for the beneficiary institutions (Section 77-1-202, MCA).

The DNRC would manage lands involved in this project in accordance with:

- The State Forest Land Management Plan (DNRC 1996),
- Administrative Rules for Forest Management (ARM 36.11.401 through 471),
- and all other applicable state and federal laws.

Project Development

SCOPING: This project has been scoped twice.

- DATE:
 - October 28, 2014
 - October 5, 2016
- PUBLIC SCOPED:
 - DNRC posted the notice on the DNRC Website: <http://dnrc.mt.gov/public-interest/public-notice>
 - DNRC sent the notice by mail to adjoining landowners and it was advertised in two papers.
- AGENCIES SCOPED:
 - Fish, Wildlife & Parks (MTFWP) and Montana Tribal Nations
- COMMENTS RECEIVED:
 - How many: DNRC received four comments.
 - Concerns: Tribal Historic Preservation Officers of the Fort Belknap Indian Community and Confederated Salish and Kootenai Tribes expressed concern over the protection of a cultural resource site. MTFWP had several project-related concerns, and provided recommendations if timber harvest does occur on this tract.
 - Results (how were concerns addressed): The cultural resource site is located on a section that is no longer part of this proposed project. MTFWP comments are addressed in detail in the Wildlife subsection of this document.

DNRC specialists were consulted: Patrick Rennie, Jeff Schmalenberg, Ross Baty, and Tim Spoelma.

Internal and external issues and concerns were incorporated into project planning and design and would be implemented in associated contracts.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

- **Montana Department of Environmental Quality (DEQ)**- DNRC is classified as a major open burner by DEQ and is issued a permit from DEQ to conduct burning activities on state lands managed by DNRC. As a major open-burning permit holder, DNRC agrees to comply with the limitations and conditions of the permit.
- **Montana/Idaho Airshed Group**- The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of air sheds and impact zones throughout Idaho and Montana. Airshed describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006). As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit.

ALTERNATIVES CONSIDERED:

No-Action Alternative: Logging and related forest improvement and road maintenance activities would not occur. The trust beneficiary would not receive any revenue from timber harvest.

Action Alternative: DNRC would harvest approximately 400 thousand board feet (MBF) of ponderosa pine utilizing a mix of selection harvest and commercial thinning silvicultural prescriptions. There would be 53 acres of pre-commercial thinning treatment. Approximately 0.25 miles of new temporary road construction would be needed to access harvest units. Approximately 1.8 miles of road maintenance and 3 miles of road reconstruction would also take place to access the DNRC parcel and bring existing roads up to BMP standards.

Impacts on the Physical Environment

Evaluation of the impacts on the No-Action and Action Alternatives including **direct, secondary, and cumulative** impacts on the Physical Environment.

VEGETATION:

Vegetation Existing Conditions:

This section has evidence of many disturbance events throughout the years. Many burn scars of various ages are present throughout. There are also several ages of stumps from harvest

activities. There have not been any recent fires. The last logging entry was in 1999 according to DNRC's Stand Level Inventory (SLI) records. Most of the parcel shows evidence of timber harvest from 1999. As a result of this logging, prolific natural regeneration of ponderosa pine is evident throughout much of the area and there is active encroachment on most of the meadows and grasslands.

There are approximately 170 acres of non-forested meadows, 50 acres of young, single storied, overstocked regeneration, 5-15-year old ponderosa pine, 6 acres of commercial age, overstocked regeneration 15-30-year old ponderosa pine, 240 acres of multi age, multi-storied, overstocked sawlog ponderosa pine with scattered juniper (these stands are highly variable with multiple age classes from 15 year old regeneration to 90 year old mature trees, with most having multi-storied composition). There are 120 acres of multi-age and multi-storied sawlog ponderosa pine with scattered juniper that are unfeasible to harvest due to the rocky, steep, sandstone rimrock geography. These stands are highly variable from dense regeneration to understocked areas due to poor growing sites. There are only a few dozen scattered old growth ponderosa pine trees located mostly in the unfeasible sawlog stands in the rimrock areas.

Most of the forested stands are heavily loaded with fuel due to prolific regeneration of ponderosa pine. The condition of forest stands on this section are aligned for a stand replacement fire in the near-future. This region of Montana has experienced large wildfires with extreme behavior.

There are no rare plant species known to exist in this area.

There are noxious weeds, predominately Canada thistle and spotted knapweed, present throughout the property. Many infestations are concentrated in the areas of historic burn piles from the 1999 harvest and weed spread has been exacerbated by historical cattle grazing. Canada thistle and knapweed are commonly found along the road and throughout the meadows.

The action alternative would not change the species composition of any of the stands. The action alternative would not change the acres of any forest types except for the encroachment of the ponderosa pine within adjacent forest meadows. There are no stands of old growth forest on the property. The few old growth trees scattered throughout the property would be left undisturbed. The overstocking and fuel loading would be significantly reduced in all forest stands thus reducing the probability of a stand replacement fire. Clumps of dense vegetation would be left scattered throughout all forest stands for wildlife cover and habitat.

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Noxious Weeds	x				x				x					
Rare Plants	x				x				x					
Vegetative community	x				x				x					
Old Growth	x				x				x					
Action														
Noxious Weeds		x				x				x			Yes	1

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Rare Plants	x				x				x					
Vegetative community	x				x				x					
Old Growth	x				x				x				N/A	2

Comments:

1. Disturbed sites from equipment operation, timber removal, and pile burning are receptive seed beds for noxious weeds.
2. There are no old growth stands. All scattered, large diameter trees would be left uncut by cutting prescription and contract description.

Vegetation Mitigations:

- Noxious weed control and mitigation would begin with equipment inspection by the forest officer and equipment washing would be required prior to commencement of operations. Pre-treatment of existing weed populations would be made a priority the summer of 2017. A proactive approach to rehabilitation of burn piles would be implemented early in the spring following the winter burning. This would include racking, spraying and seeding of these burn sites.
- Many islands of trees and vegetation would be left where the ground is too steep, rocky, and broken to harvest trees feasibly or economically. Additionally, islands would be left where no sawlogs exist and where advanced regeneration and snags are present.
- Given operability and human safety constraints, retain all existing non-merchantable snags where possible. Across all harvest units, retain at least 1 large snag tree and 1 large recruitment tree per acre (both >21 inches dbh, or largest available). Distribution may be variable.
- In all harvest units, retain large woody debris within ranges recommended by Graham et al. (1994). For this project the appropriate range is approximately 5 tons/acre and emphasize the retention of large downed logs where possible.
- Where opportunities exist, retain leave trees and retention areas in a clumped fashion to emulate natural disturbance patterns and reduce sight distances for wildlife.

SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions: Primary soils types within the project area loams to clay loams on hilly landforms ranging in slope from 15 to 65 percent. These soils are primarily well drained and typically range 10 to 20 inches in depth before encountering restrictive paralithic, sandstone bedrock.

These soils are moderately prone to compaction if equipment operations occur during periods of high soil moisture. Displacement hazard is also moderate and increases as slopes exceed 35%. These soils present a moderate risk of erosion on disturbed sites with bare mineral soil exposed. This risk is largely related to the soil texture and convective thunderstorm potential in the general area that can produce impressive rainfall intensities.

Soil productivity is low due to the cold and dry site conditions and low available nutrient pools. Low levels of existing cumulative effects to soil productivity occur within the project area on existing skid trails and landing sites as a result of previous harvest in 1999. No unstable or geologically active sites occur within the project area.

Soil Disturbance and Productivity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Physical Disturbance (Compaction and Displacement)	X				X				X					
Erosion	X				X				X					
Nutrient Cycling	X				X				X					
Slope Stability	X				X				X					
Soil Productivity	X				X					X				
Action														
Physical Disturbance (Compaction and Displacement)		X				X				X			Yes	1
Erosion		X				X			X				Yes	2
Nutrient Cycling	X				X				X				Yes	3
Slope Stability	X				X				X					
Soil Productivity		X				X				X			Yes	4

Comments:

1. The Action Alternative presents a low risk of direct, secondary and cumulative impacts to soil resources from compaction and displacement. Monitoring of DNRC timber harvest shows the level of total detrimental soil impacts 13.2% of a harvest area using traditional ground based operations (DNRC 2011). Detrimental soil impacts are considered substantive when they exceed 20 percent of a harvest area (DNRC 1996). Soil productivity is expected to be maintained when soil function is maintained within 80% of a harvest unit.
2. The Action Alternative presents a low risk of direct and secondary impacts to soil resources for erosion. Standard implement of forest management BMP's to control erosion concurrent with harvest activities would mitigate any erosion concerns in the project area.
3. Slash greater than 3" in diameter would be left at a rate of 5 tons an acre within the harvest units where feasible. No impacts to site nutrient pools are expected.
4. Previous skid trails and log landing sites would be reused as feasible to prevent additional cumulative impacts to soil productivity within the project area. All impacts to soil resources would be below 20% of the harvest area. Low level direct, secondary, and cumulative effects are expected from implementing the action alternative. Soil

productivity is expected to be maintained when soil function is maintained within 80% of a harvest unit (DNRC, 1996).

Soil Mitigations:

- Ground based equipment operations limited to slopes less than 45%.
- Limiting season of use to periods when soils are relatively dry (less than 20%), frozen or snow covered to minimize soil compaction and maintain drainage features.
- Minimizing ground scarification to the extended needed to meet silvicultural objectives.
- Forest Officer and Purchaser would agree to a general skidding plan prior to equipment operations and designate skid trails within complex areas.
- Reuse previous skid trails and log lands identified by the forest officer as feasible.
- Slash greater than 3" in diameter would be left at a rate of 5 tons an acre within the harvest units where feasible.
- Skidding at elevational low points in draw bottoms would be prohibited.
- Road drainage would be improved on existing and reconstructed roads with new construction complying with Forest Management BMP's

WATER QUALITY AND QUANTITY:

Water Quality and Quantity Existing Conditions: The project area is within the Parrott Creek watershed (52mi²) which is tributary to the Musselshell river downstream of Roundup, MT. This low relief watershed (1,407') is moderately dissected with the primary runoff generation mechanism being shallow soils and high hillslope transmission. The watershed is 54% forested which results in forest vegetation providing very little control on runoff generation.

The waters of Parrott Creek are classified as C-3 under Montana Water-use Classifications (ARM 17.30.610 and 17.30.629). Waters classified C-3 are to be maintained suitable for bathing, swimming, and recreation, and growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl, and furbearers. The quality of these waters is naturally marginal for drinking, culinary, and food processing purposes, agriculture, and industrial water supply.

All streams within the project area are Class III under the Montana Streamside Management Zone (SMZ) law. No harvest is proposed within any adjacent SMZ. One temporary crossing of a Class III channel during dry conditions is proposed.

Parrott Creek does not support a fishery (MT FWP MFish, 2017) and thus fishery related issues will be dismissed from further analysis.

Water Quality & Quantity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Water Quality	X				X				X					
Water Quantity	X				X				X					
Action														
Water Quality		X				X				X			Yes	1
Water Quantity	X				X				X				N/A	2

Comments:

1. Due to the harvest system utilized, location of harvest units relative to stream channels, magnitude of new road construction, implementation of Forest Management BMP's and the low precipitation within the project area there is a low risk of direct, secondary or cumulative water quality impacts.
2. Forest stands are not likely to be a major influence on the hydrology and flow regimes of the streams draining the proposed timber sale area. Many of the trees in the proposed harvest units have been affected by spruce budworm or mountain pine beetle. The proposed harvest is not expected to substantially decrease the levels of canopy interception or evapotranspiration potential over that likely to occur in these watersheds under no action. The levels of harvest proposed are also well below those cumulative levels associated with detrimental increases in water yield. Due to these factors, no direct, secondary or cumulative impacts to water quantity are anticipated under the proposed action.

Water Quality & Quantity Mitigations:

- Best Management Practices for Forestry would be implemented and monitored for effectiveness concurrent with all forest management activities.
- Implementation of Montana Administrative Rules for Forest Management and Streamside Management Zones.
- Ephemeral draw crossings would be kept to a minimum and skidding down topographic convergences (draw bottoms) would be prohibited.
- Major skid trails would be grass seeded, closed with slash and debris and/or barriers, and adequate drainage provided.

WILDLIFE:

For this project, direct and indirect effects were considered at the scale of the project area. Cumulative effects were considered for the project area and additional eight surrounding sections of land. Species occurrence records in the Montana Natural Heritage Program Database were queried for federally listed threatened, endangered and non-listed sensitive species (May 16, 2017). Information regarding species identified in that query is provided below.

Concerns Provided by Montana Fish, Wildlife and Parks and DNRC Response:

The following concerns were provided on November 2, 2016 during public scoping for the project:

C1: The project area provides excellent wildlife habitat and proposed logging would not improve it.

DNRC Response: DNRC recognizes that the proposed removal of mature trees and thinning and slashing of some saplings would alter habitat and reduce cover for some wildlife species. Other species preferring more open forest conditions would be expected to benefit. Forest ecosystems in Montana are dynamic and are continually influenced by natural disturbances and advancing plant succession. They are not static. The proposed action would retain considerable levels of cover post-logging, reduce fuels, improve habitat diversity, promote growth of existing trees, and promote sustainability of mature forest cover by lowering risks associated with insects, disease and wildfire.

C2: The parcel provides excellent habitat for wild turkeys, particularly for roosting, security and feeding (pine seeds) and proposed logging would reduce the quality of existing habitat.

DNRC Response: See discussion in fine filter analysis below.

C3: The parcel provides security and winter thermal habitat for white-tailed deer, mule deer and elk, and proposed logging would reduce the quality of existing habitat.

DNRC Response: See discussion in fine filter analysis below.

C4: The parcel provides habitat for non-game species, a number of song birds, and species of concern.

DNRC Response: See assessment in fine filter analysis below.

Recommendations Provided by MFWP and DNRC Response:

R1: Maintain a minimum basal area of at least 100 square feet per acre in all timber stands.

DNRC Response: Currently most stands within the project area don't meet this requirement. We anticipate a sizable portion of the harvest units post-harvest would not meet this basal area recommendation.

R2: Leave some denser timber stands for thermal protection and security habitat.

DNRC Response: This would be incorporated into unit layout and harvest design and we plan to leave islands of dense trees scattered throughout the treatment areas. In addition, many of

these dense timber stands would be left in areas where no harvest would occur such as the steep rim rock areas that are infeasible to harvest throughout the property.

R3: Where available, some trees of 14-inch dbh and larger should be left on east-facing slopes for turkey roost trees.

DNRC Response: This would be incorporated into unit layout and harvest design.

R4: Retain good quality leave trees >12 inch dbh for cavity-nesting birds.

DNRC Response: This would be incorporated into unit layout and harvest design.

R5: Retain sound snags greater than 23 inches dbh for cavity-nesting bird species.

DNRC Response: The largest available snags and snag recruitment trees available on the project area would be retained. At least one large snag and one live recruitment tree per acre would be retained.

R6: Avoid logging operations from April through July to minimize impacts to nesting bird species of concern.

DNRC Response: Operations in the spring period would generally be avoided, particularly when soil are wet. Activities could occur in April through July as operating conditions allow. Given the relatively small scale of the total area that would be disturbed (301 acres) and the relatively slow, progressive nature of the proposed vegetation treatments, minor disturbance, displacement, and/or incidental nest loss would be anticipated. Further, similar habitat is abundant on surrounding lands in the vicinity of the project area.

Habitat Connectivity and Linkage

Habitat on the project area and surrounding sections is primarily comprised of patchy conifer forest interspersed with meadows, grasslands and limestone outcroppings. Under historical conditions, forest conditions in this area were likely fragmented by periodic natural disturbances (Gruell 1983). Harvest prescriptions proposed under the action alternative could potentially create small openings in forest stands and leave them in a more open, park-like condition post-harvest. This could cause minor changes in daily movements and habitat use by wildlife species such as, deer, elk and wild turkeys. However, considerable cover would be retained and dense patches associated with more rugged inoperable areas would be retained, which would continue to facilitate habitat use and travel through the area. No documented or defined habitat connectivity areas or linkage zones have been identified on this parcel. Thus, minor adverse direct, indirect and cumulative effects involving habitat fragmentation, altering movement corridors, and habitat linkage zones would be anticipated.

No-Action: Under the no action, none of the proposed project-related activities would occur in the foreseeable future. Trees would not be removed and no habitat alterations or disturbance would occur. Timber stands would continue to provide habitat conditions for species preferring

more dense forest conditions, while those preferring more open stand conditions to meet their life requisites would not benefit.

Action Alternative (see Wildlife table below):

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Threatened and Endangered Species														
Grizzly bear (<i>Ursus arctos</i>) Habitat: Recovery areas, security from human activity	X				X				X					
Canada lynx (<i>Felix lynx</i>) Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone	X				X				X					
Wolverine (<i>Gulo gulo</i>)	X				X				X					
Sensitive Species														
Bald eagle (<i>Haliaeetus leucocephalus</i>) Habitat: Late-successional forest within 1 mile of open water	X				X				X					
Black-backed woodpecker (<i>Picoides arcticus</i>) Habitat: Mature to old burned or beetle-infested forest	X				X				X					
Black-tailed prairie dog (<i>Cynomys ludoviscianus</i>) Habitat: grasslands, short-grass prairie, sagebrush semi-desert	X				X				X					
Gray Wolf (<i>Canis lupus</i>)	X				X				X					

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Habitat: Ample big game populations, security from human activities														
Harlequin duck (<i>Histrionicus histrionicus</i>) Habitat: White-water streams, boulder and cobble substrates	X				X				X					
Mountain plover (<i>Charadrius montanus</i>) Habitat: short-grass prairie & prairie dog towns	X				X				X					
Peregrine falcon (<i>Falco peregrinus</i>) Habitat: Cliff features near open foraging areas and/or wetlands	X				X				X					
Greater Sage grouse (<i>Centrocercus urophasianus</i>) Habitat: sagebrush semi-desert	X				X				X				NA	1.
Townsend's big-eared bat (<i>Plecotus townsendii</i>) Habitat: Caves, caverns, old mines	X				X				X					
Spotted Bat (<i>Euderma maculatum</i>) Habitat: rock outcrops, cliffs, caves, old mines		X				X				X			Y	2.
Hoary Bat (<i>Lasiurus cinereus</i>) Habitat: rock outcrops, cliffs, trees, snags		X				X				X			Y	3.
Greater Short-Horned Lizard (<i>Phrynosoma herdandesi</i>)		X				X				X			Y	4.

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Habitat: Coulees, sun-baked soil, limestone outcrops, canyon bottoms														
White-tailed Prairie Dog (<i>Cynomys leucurus</i>) Habitat: mountain meadows, semi-desert grassland	X				X				X					
Big Game Species														
Elk		X				X				X			Y	5.
Whitetail		X				X				X			Y	5.
Mule Deer		X				X				X			Y	5.
Wild Turkey		X				X				X			Y	6.

Comments:

1. The project area lies outside of defined sage grouse habitat as depicted on current maps provided by the Montana Sage Grouse Habitat Conservation Program (5/18/17). No project related impacts would be anticipated.

2. MNHP data records indicate that spotted bats have been documented in the local area and habitat is potentially present on the project area. Spotted bats often roost in rock outcrops and crevices. Rugged areas and sites with rocky outcrops would be avoided during proposed logging operations. However, should spotted bats be present in the area, they could potentially be disturbed by nearby logging activities for a short period of time. Thus, minor short term adverse direct, indirect and cumulative effects associated with logging disturbance could be possible.

3. MNHP data records indicate that hoary bats have been documented in the local area and habitat is potentially present on the project area. Hoary bats often roost in large trees and snags. A number of these features where they exist on the project area would be retained and they would remain well-represented on the project area, particularly in steep, rocky areas that would not be entered at this time. However, should hoary bats be present in the area, they could potentially be disturbed by nearby logging activities for a short period of time. Thus, minor short term adverse direct, indirect and cumulative effects associated with logging disturbance and loss of some large trees and snags could be possible.

4. MNHP data records indicate that greater short-horned lizards have been documented in the local area and habitat is potentially present on the project area. This species is associated with coulee areas, limestone rock outcrops and canyon bottoms, particularly in areas with sun-baked soil. Such areas occur on the project area. However, logging activities would be restricted in

these areas, which would minimize the potential for adverse effects to this species. Thus, minor adverse direct, indirect and cumulative effects to this species would be anticipated.

5. The project area provides habitat for white-tailed deer, mule deer and elk. Notable habitat attributes present for these species are hiding cover and winter thermal cover. The presence of an open county road running through the east portion of the project area limits the areas habitat potential to provide secure habitat for elk in the traditional sense. Proposed activities would be expected to increase sight distances within forested stands and could increase elk and deer vulnerability to hunting mortality. Reducing forest cover by thinning would also reduce the thermal insulating properties and snow interception properties of existing dense stands of trees, which could cause minor increases in energetic costs to individuals using the area during harsh winter conditions. During logging activities, disturbance associated with equipment operation would likely displace any local animals in the area during the season of operation. Given that: 1) the existence of the county road and several open ranch access roads in the area, 2) proposed partial harvest treatments would retain a sizable number of trees standing post-logging, 3) dense patches of trees would remain in some areas which would limit sight distances, 4) the scale of the area affected would be relatively small at 301 acres, and 5) similar dense cover does not appear to be limited in the surrounding area, minor adverse direct, indirect and cumulative effects to deer and elk associated with cover removal would be anticipated.

6. The project area provides habitat for wild turkeys. Notable habitat attributes present for these species are roosting sites, and foraging habitat (pine seeds in pine stands). Proposed activities would be expected to increase sight distances within forested stands and could reduce the presence of roost trees. Many potential roost trees would be retained, particularly in areas with rock outcrops and rugged terrain. Tree density in treated stands would be reduced and stands would be left in a more open, park-like condition. In such areas, we would anticipate that ample foraging areas for turkeys would remain and be potentially enhanced, particularly considering the levels of cover post-logging that would be retained, the reduction of fuels, greater potential for improved growth of existing trees over time, and the improved sustainability of mature forest cover by lowering risks associated with insects, disease and wildfire. During logging activities, disturbance associated with equipment operation would likely displace any local turkeys short term, during the season of operation. Given that: 1) proposed partial harvest treatments would retain a sizable number of trees standing post-logging, 2) dense patches of trees and large roost trees would remain in some areas, 3) the scale of the area affected would be relatively small at 301 acres, and 4) similar dense cover and habitat does not appear to be limited in the surrounding area, minor adverse direct, indirect and cumulative effects to wild turkeys would be anticipated.

Wildlife Mitigations:

-Many islands of trees and vegetation would be left where the ground is too steep, rocky, and broken to harvest trees feasibly or economically. Additionally islands would be left where no sawlogs of significance exist and where advanced regeneration and snags are present.

-If a threatened or endangered species or active raptor nest is encountered on the project area or within ½ mile of the project area, a DNRC biologist would be consulted immediately. Should such a situation arise, a DNRC wildlife biologist would develop a site specific plan to minimize the exposure, frequency, and duration to disturbance associated with hauling, while considering site-specific cover conditions, terrain, the sensitivity phase of the nesting season, and stage of fledgling development.

-Given operability and human safety constraints, retain all existing non-merchantable snags where possible. Across all harvest units, retain at least 1 large snag and 1 large recruitment trees per acre (both >21 inches dbh, or largest available). Distribution may be variable.

-In all harvest units retain large woody debris within ranges recommended by Graham et al. (1994). For this project the appropriate range is approximately 5 tons/acre, and emphasize the retention of large downed logs where possible.

-Where opportunities exist, retain leave trees and retention areas in a clumped fashion to emulate natural disturbance patterns and reduce sight distances for wildlife.

-Reclaim temporary and existing unneeded roads effectively to prevent all forms of motorized access upon project completion.

-Ensure gates or other closure devices are functional and effective on restricted road segments.

AIR QUALITY:

Air Quality	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Smoke	X				X				X					
Dust	X				X				X					
Action														
Smoke		X				X				X			Yes	1
Dust		X				X				X			Yes	2

Comments:

- 1) Slash consisting of tree limbs and tops and other vegetative debris would be piled throughout the project area during harvesting. DNRC would like to grind or chip the slash and use it for biomass energy or some other use such as compost or material for road overlay. If these uses were not feasible the piles would be burned. Slash burning would introduce smoke into the local airshed, but would be done only on days approved for burning by the Montana/Idaho Airshed Group and/or Montana Dept. of Environmental

Quality, resulting in minor and temporary direct, indirect, and cumulative effects to air quality.

- 2) Harvesting and hauling logs could create dust, which may affect local air quality. However, because dust would be localized to skid trails and haul roads and operating seasons would be short in duration, effects to air quality as a result of dust generated during harvest activities are expected to be low.

Air Quality Mitigations: Burning within the project area would be short in duration and would be conducted when conditions favor good to excellent ventilation and smoke dispersion as determined by the Montana Department of Environmental Quality and the Montana/Idaho Airshed Group. DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days.

ARCHAEOLOGICAL SITES / AESTHETICS / DEMANDS ON ENVIRONMENTAL RESOURCES:

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Historical or Archaeological Sites	X				X				X					
Aesthetics	X				X				X					
Demands on Environmental Resources of Land, Water, or Energy	X				X				X					
Action														
Historical or Archaeological Sites	X				X				X				N/A	1
Aesthetics	X				X				X					
Demands on Environmental Resources of Land, Water, or Energy	X				X				X					

Comments:

- 1) A Class III inventory of cultural and paleontologic resources of the area of potential effect (APE) was conducted by DNRC staff. One paleontologic resource (24ML0969) and four cultural resources (24ML0965, 24ML0966, 24ML0967, and 24ML0968) are within the project APE. Sites 24ML0965 through 24ML0967 are low-profile cairns that appear to be of very recent construction. Site 24ML0968 is a historic inscription of a livestock brand in a sandstone outcrop. Site 24ML0969 is a fossilized conifer tree branch embedded in a sandstone exposure. Sites 24ML0965 through 24ML0968 are considered here to be ineligible for National Register listing. Site 24ML0969 is not scientifically significant.

Regardless, these resources are outside areas where any ground disturbance would occur. As such the proposed project would have no effect to *Antiquities* as defined in the State Antiquities Act. A cultural and paleontologic resources inventory report has been prepared and is on file with the DNRC, (Helena) and the Montana State Historic Preservation Office (Helena).

Mitigations:

- If previously unknown cultural or paleontological materials are identified during project related activities, all work would cease until a professional assessment of such resources can be made.

OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

- N/A

Impacts on the Human Population

Evaluation of the impacts on the proposed action including **direct, secondary, and cumulative** impacts on the Human Population.

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Health and Human Safety	X				X				X					
Industrial, Commercial and Agricultural Activities and Production	X				X				X					
Quantity and Distribution of Employment	X				X				X					
Local Tax Base and Tax Revenues	X				X				X					
Demand for Government Services	X				X				X					
Access To and Quality of Recreational and Wilderness Activities	X				X				X					
Density and Distribution of population and housing	X				X				X					

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Social Structures and Mores	X				X				X					
Cultural Uniqueness and Diversity	X				X				X					
Action														
Health and Human Safety	X				X				X					
Industrial, Commercial and Agricultural Activities and Production	X				X				X					
Quantity and Distribution of Employment	X				X				X					
Local Tax Base and Tax Revenues	X				X				X					
Demand for Government Services	X				X				X					
Access To and Quality of Recreational and Wilderness Activities		X				X				X			Y	1.
Density and Distribution of population and housing	X				X				X					
Social Structures and Mores	X				X				X					
Cultural Uniqueness and Diversity	X				X				X					

Comments:

1. Montana Fish, Wildlife and Parks conveyed the concern that the project area has high wildlife habitat value and associated recreational value that would be adversely impacted by proposed logging activities. Existing access for public recreation would not be influenced by proposed activities. However, changes in the density of trees in portions of the project area that would be logged could alter the number and type of wildlife species frequenting the project area, resulting in reduced wildlife viewing and/or hunting opportunities. Given that: 1) the types of proposed treatments that would retain considerable conifer cover after logging, 2) relatively small scale of the acreage proposed for treatment (301 ac.), 3) the presence of considerable amounts of similar vegetation on surrounding ownerships in the area, and 4) many inoperable patches of heavier cover associated with limestone bluffs in the area would be retained, adverse direct, indirect, and cumulative effects on public recreation would be expected to be minor.

Mitigations: N/A

Locally Adopted Environmental Plans and Goals:

None.

Other Appropriate Social and Economic Circumstances:

Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return. The estimated stumpage is based on comparable sales analysis. This method compares recent sales to find a market value for stumpage. These sales have similar species, quality, average diameter, product mix, terrain, date of sale, distance from mills, road building and logging systems, terms of sale, or anything that could affect a buyer's willingness to pay.

No Action: The No Action alternative would not generate any return to the trust at this time.

Action: The timber harvest would generate additional revenue for the Common School Trust. The estimated return to the trust for the proposed harvest is \$4,100 based on an estimated harvest of 400 thousand board feet (2,046 tons) and an overall stumpage value of \$2.00 per ton. Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives, they are not intended to be used as absolute estimates of return.

References

DNRC 1996. State forest land management plan: final environmental impact statement (and appendixes). Montana Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, Montana.

Does the proposed action involve potential risks or adverse effects that are uncertain but extremely harmful if they were to occur?

No.

Does the proposed action have impacts that are individually minor, but cumulatively significant or potentially significant?

No.

Environmental Assessment Checklist Prepared By:

Name: Jeff Hermanns
Title: Management Forester
Date: May 27, 2017

Finding

Alternative Selected

I have reviewed the environmental analysis and have selected the Action Alternative.

Significance of Potential Impacts

Upon review of the project and the analysis herein, I find that none of the project impacts are regarded as severe, enduring, geographically widespread, or frequent. Further, I find that the quantity and quality of the natural resources, including any that may be considered unique or fragile, will not be adversely affected to a significant degree. I find no precedent for the future actions that would cause significant impacts, and I find no conflict with local, State, or federal laws, requirements, or formal plans. In summary, I find that adverse impacts would be avoided, controlled, or mitigated by the design and implementation of the project to an extent that they are not significant.

Need for Further Environmental Analysis

☐

EIS

☐

More Detailed EA

☒

No Further Analysis

Environmental Assessment Checklist Approved By:

Name: Matt Wolcott

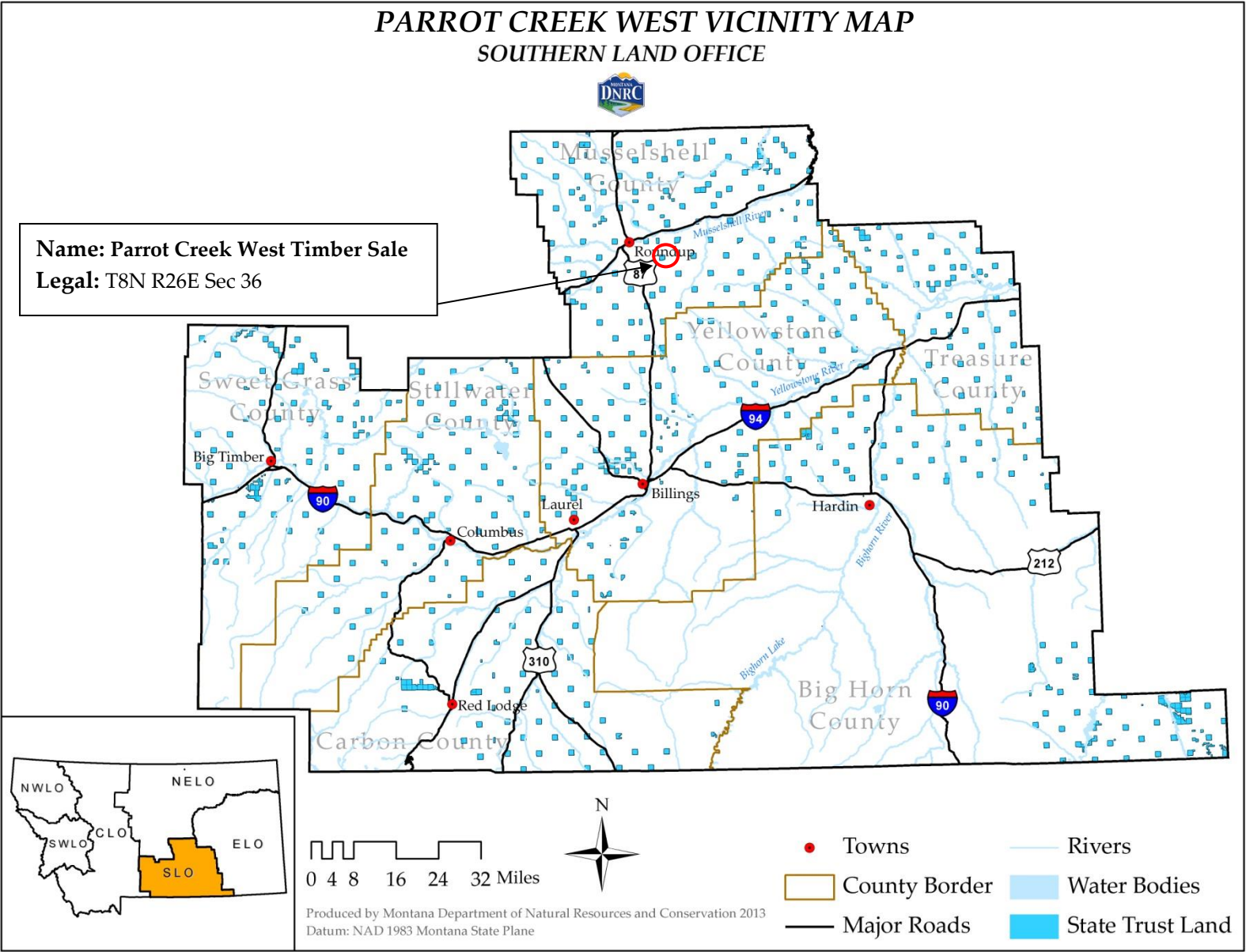
Title: Area Manager

Date: May 31, 2017

Signature: /s/ Matt Wolcott

Attachment A - Maps

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Harvest Units

Parrot Creek West Timber Sale Harvest Map

